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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/713,807

11/14/2003

Eric Ameres

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EXAMINER

CZEKAJ, DAVID J

ART UNIT

PAPER NUMBER

2621

MAIL DATE

DELIVERY MODE

08/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/713,807	Applicant(s) AMERES ET AL.	
	Examiner DAVID CZEKAJ	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) 2-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 49-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 49, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumura et al. (6125144), (hereinafter referred to as "Matsumura") in view of Mukerjee et al. (7116831), (hereinafter referred to as "Mukerjee").

Regarding claim 1, Matsumura discloses an apparatus that relates to a picture coding method (Matsumura: column 1, lines 6-10). This apparatus comprises "transforming the pixels of each block into coefficients and creating an optimal transmission order" (Matsumura: figure 5, wherein the DCT performs the transformation) and "optimizing the speed of processing compressed video data by partitioning the bitstream and coding each partition independently" (Matsumura: column 4, lines 37-43). However, this apparatus lacks the fractional motion and error recovery as claimed. Mukerjee teaches that prior art encoders and decoders fail to account for the accumulation of rounding error which causes artifacts in video sequences (Mukerjee: column 4, lines 54-60). To help alleviate this problem, Mukerjee discloses "predicting fractional pixel motion by selecting an interpolation method for each pixel depending upon one metric related to the block" (Mukerjee: column 6, lines 41-47, wherein the

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fractional pixel motion is the sub pixel motion), and “enhancing error recovery for a frame using a frame prior to the frame immediately before the frame as the only reference frame” (Mukerjee: column 9, lines 24-30). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Matsumura and add the processing taught by Mukerjee in order to obtain an apparatus that helps reduce artifacts in video sequences.

Regarding claim 49, Mukerjee discloses “finding a block that best matches the block to be encoded, determining the best fractional pixel step, calculating a motion vector, using an algorithm to determine when to encode no motion vector, the vector by reference to a nearby vector, the vector directly, the vector as a difference vector, and transmitting the vector” (Mukerjee: figures 4-8; column 9, lines 15-40; column 11, line 54 – column 12, line 15).

Regarding claim 51, although not disclosed, it would have been obvious to calculate a compound motion vector through an average (Official Notice). Doing so would have been obvious in order to capture a better representation of the sample by performing an averaging operation.

2. Claims 50 and 52-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumura et al. (6125144), (hereinafter referred to as “Matsumura”) in view of Mukerjee et al. (7116831), (hereinafter referred to as “Mukerjee”) in further view of Wu et al. (6418166), (hereinafter referred to as “Wu”).

Regarding claim 50, note the examiners rejection for claim 1, and in addition, claim 50 differs from claim 1 in that claim 50 further requires differential encoding the block to the left and above. Wu teaches that minimizing the number of bits needed to encode the error signal does not necessarily result in the most efficient coding of the overall block (Wu: column 3, lines 25-32). To help alleviate this problem, Wu discloses “differentially encoding a vector from the vector of the block to the left if that block has a motion vector or the vector of the block above if that block has one but the vector does not and otherwise encodes the vector directly” (Wu: column 8, lines 43-59). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the motion vector processing taught by Wu in order to more effectively encode video data.

Regarding claim 52, Wu discloses “coding the row as differential from the vector of the block to the left and the column from the block above” (Wu: column 8, lines 43-59).

Regarding claim 53, Wu discloses “coding the vector between the above or left block if the vectors of the blocks to the left and above are similar” (Wu: figure 7; column 8, lines 43-59).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US-6826229	12-2004	Kawashima et al.
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US-7226150 09-2007 Demos

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID CZEKAJ whose telephone number is (571)272-7327. The examiner can normally be reached on Mon-Thurs and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dave Czekaj/
Primary Examiner, Art Unit 2621